



## NS3

Electronic starter for low and medium power cage motors

The soft electronic starter NOVADEM S3 (NS3) is designed to control all aspects of starting, stopping and protection of 3 phase squirrel cage motors up to 1200 kW at 690 V.

## Description

The soft starter NOVADEM S3 (NS3) is designed to control all aspects of starting, stopping and protection of 3 phase squirrel cage motors up to 1200 kW at 690 V. These high performance digital starters offer a user interface that supports a quick programming method by using pre-configured application macros. The NS3 also features as standard a RS232 serial link to communicate with a PC or a network. The NS3 starters allow a progressive starting, protection and stopping (freewheel, regulated or quick) of any three-phase asynchronous motors over a large range of power. The NS3 user interface is made of:

- A user-friendly display and keyboard interface for quick programming of every application by selecting the appropriate macro-programming
- A RS 232 serial link to connect it to a PC or a network

The powerful software enables the starter to be programmed and maintained without the constant need for an operating manual.

## Macro programming

The use of macros greatly simplify the programming of the starter: it only requires to know the nominal current of the motor and the nature of the application. The macro program corresponding to your machine not only selects the relevant parameter settings for you, it also configures the programmable I/O terminals. Numerous application macros are available, such as: centrifugal pumps, vacuum pumps, fans, compressors, grinders, conveyors... However, if the application macro is not available, the NS3 allows for easy programming of all the functions and parameters by means of the 40 character user interface.

# Specifications

## Models 230 V

Reference	Max motor power in kW		Amps		Size	Weight
	Starting for low / medium loads	Starting for high loads	Starting for low / medium loads	Starting for high loads		
NS3-21-25 NS3-21-55 NS3-21-90	5.5 11 15	4 5.5 7.5	23 A 37 A 44 A	16 A 23 A 30 A	Size 200 x 370 x 182 mm	8.5 kg
NS3-2-90 NS3-22-91 NS3-22-132 NS3-22-160	18,5 22 25 30	11 15 18,5 22	59 A 72 A 87 A 106 A	37 A 44 A 59 A 87 A	Size 2 200 x 370 x 255 mm	10 kg
NS3-23-250 NS3-23-251 NS3-23-300	37 45 55	27 30 45	144 A 173 A 210 A	106 A 121 A 144 A	Size 3 200 x 470 x 265 mm	16 kg
NS3-24-300 NS3-24-500 NS3-24-600	75 90 132	55 63 90	251 A 302 A 376 A	173 A 210 A 302 A	Size 4 454 x 685 x 285 mm	44 kg
NS3-25-760 NS3-25-1200 NS3-25-1500	160 200 220	110 150 160	468 A 615 A 668 A	376 A 468 A 514 A	Size 5 454 x 685 x 285 mm	52 kg
NS3-27-1200 NS3-27-1800 NS3-27-2300	250 315 400	200 250 280	741 A 915 A 1158 A	615 A 741 A 914 A	Size 7 530 x 1340 x 420 mm	165 kg

## Models 400 V

Reference	Max motor power in kW		Amps		Size	Weight
	Starting for low / medium loads	Starting for high loads	Starting for low / medium loads	Starting for high loads		
NS3-41-25 NS3-41-55 NS3-41-90	11 18.5 22	7,5 11 15	23 A 37 A 44 A	16 A 23 A 30 A	Size 1 200 x 370 x 182 mm	8.5 kg
NS3-42-90 NS3-42-91 NS3-42-132 NS3-42-160	30 37 45 55	18,5 22 30 45	59 A 72 A 87 A 106 A	37 A 44 A 59 A 87 A	Size 2 200 x 370 x 255 mm	10 kg
NS3-43-250 NS3-43-251	75 90	55 63	144 A 173 A	106 A 121 A	Size 3 200 x 470 x	16 kg

NS3-43-300	110	75	210 A	144 A	265 mm	
NS3-44-300	132	90	251 A	173 A	Size 4 454 x 685 x 285 mm	44 kg
NS3-44-500	160	110	302 A	210 A		
NS3-44-600	200	160	376 A	302 A		
NS3-45-760	250	200	468 A	376 A	Size 5 454 x 685 x 285 mm	49 kg
NS3-45-120	335	250	615 A 668 A	468 A 514 A		
NS3-45-150	400	280	668 A	514 A	Size 5 454 x 685 x 285 mm	52 kg
NS3-47-120	450	335	741 A	615 A	Size 7 530 x 1340 x 420 mm	165 kg
NS3-47-180	560	400	915 A	741 A		
NS3-47-230	670	500	1158 A	914 A		

## Models 500 V

Reference	Max motor power in kW		Amps		Size	Weight
	Starting for low / medium loads	Starting for high loads	Starting for low / medium loads	Starting for high loads		
NS3-51-25	11	7.5	23 A	16 A	Size 1 200 x 370 x 182 mm	8.5 kg
NS3-51-55	22	15	37 A	23 A		
NS3-51-90	30	18.5	44 A	30 A		
NS3-52-90	37	22	59 A	37 A	Size 2 200 x 370 x 255 mm	10 kg
NS3-52-91	45	30	72 A	44 A		
NS3-52-132	55	37	87 A	59 A		
NS3-52-160	75	55	106 A	87 A		
NS3-53-250	90	63	144 A	106 A	Size 3 200 x 470 x 265 mm	16 kg
NS3-53-251	110	75	173 A	121 A		
NS3-53-300	132	90	210 A	144 A		
NS3-54-300	160	110	251 A	173 A	Size 4 454 x 685 x 285 mm	44 kg
NS3-54-500	200	132	302 A	210 A		
NS3-54-600	250	200	376 A	302 A		
NS3-55-760	315	250	468 A	376 A	Size 5 454 x 685 x 285 mm	49 kg
NS3-55-1200	400	315	6215 A	468 A	Size 6 640 x 715 x 390 mm	85 kg
NS3-55-1500	450	355	668 A	514 A		
NS3-57-1200	500	400	741 A	615 A	Size 7 530 x 1340 x 420 mm	165 kg
NS3-57-1800	630	500	915 A	741 A		
NS3-57-2300	900	630	1158 A	914 A		

## Further features

Starting	Voltage ramp or constant current, with or without a torque boost. Starting current adjustable between 1 and 5 times the full load current of the motor. Starting time adjustable between 1 and 220 seconds.
Stopping	Freewheel stop, decelerating, controlled stop for pumps, brake stop or emergency stop. Stopping time adjustable between 1 and 220 seconds.
Further functions	Energy saving, restart on the fly, automatic restart function, motor drying function, contra-rotation starting, two-speed motors and cascade starting (4 different motors), forced start, auto-test, locked rotor detection, delta-coupled starting, variable speed function (special motors).....

## General specifications

Size	See above
Weight	See above
Display	Large 40 character alpha-numerical display 8 button keyboard
Power supply	230 V (-20%/+15%), 50/60 Hz 400 V (-20%/+15%), 50/60 Hz 500 V (10%/+15%), 50/60 Hz 690 V (10%/+15%), 50/60 Hz
Control supply	230 V (+10%/-15%), 50/60 Hz 115 V (+10%/-15%), 50/60 Hz or 48 V-
Communication ports	RS 232

## Environmental specifications

Operating reference range	-10°C to +40°C (RH: < 90% w/o condensing)
Limit operating range	-10°C to +55°C (RH: < 90% w/o condensing)

## Models and accessories

### Instrument:

NS3                      Electronic starters for low and medium power cage motors

### Ordering code structure: NS3 – XX – XXX

*Please select the required features among the tables below to define the right device reference.*

#### Models 230 V

Reference	Max motor power in kW		Amps		Size	Weight
	Starting for low / medium loads	Starting for high loads	Starting for low / medium loads	Starting for high loads		
NS3-21-25 NS3-21-55 NS3-21-90	5.5 11 15	4 5.5 7.5	23 A 37 A 44 A	16 A 23 A 30 A	Size 200 x 370 x 182 mm	8.5 kg
NS3-2-90 NS3-22-91 NS3-22-132 NS3-22-160	18,5 22 25 30	11 15 18,5 22	59 A 72 A 87 A 106 A	37 A 44 A 59 A 87 A	Size 2 200 x 370 x 255 mm	10 kg
NS3-23-250 NS3-23-251 NS3-23-300	37 45 55	27 30 45	144 A 173 A 210 A	106 A 121 A 144 A	Size 3 200 x 470 x 265 mm	16 kg
NS3-24-300 NS3-24-500 NS3-24-600	75 90 132	55 63 90	251 A 302 A 376 A	173 A 210 A 302 A	Size 4 454 x 685 x 285 mm	44 kg
NS3-25-760 NS3-25-1200 NS3-25-1500	160 200 220	110 150 160	468 A 615 A 668 A	376 A 468 A 514 A	Size 5 454 x 685 x 285 mm	52 kg
NS3-27-1200 NS3-27-1800 NS3-27-2300	250 315 400	200 250 280	741 A 915 A 1158 A	615 A 741 A 914 A	Size 7 530 x 1340 x 420 mm	165 kg

#### Models 400 V

Reference	Max motor power in kW		Amps		Size	Weight
	Starting for low / medium loads	Starting for high loads	Starting for low / medium loads	Starting for high loads		
NS3-41-25 NS3-41-55 NS3-41-90	11 18.5 22	7,5 11 15	23 A 37 A 44 A	16 A 23 A 30 A	Size 1 200 x 370 x 182 mm	8.5 kg

NS3-42-90	30	18,5	59 A	37 A	Size 2 200 x 370 x 255 mm	10 kg
NS3-42-91	37	22	72 A	44 A		
NS3-42-132	45	30	87 A	59 A		
NS3-42-160	55	45	106 A	87 A		
NS3-43-250	75	55	144 A	106 A	Size 3 200 x 470 x 265 mm	16 kg
NS3-43-251	90	63	173 A	121 A		
NS3-43-300	110	75	210 A	144 A		
NS3-44-300	132	90	251 A	173 A	Size 4 454 x 685 x 285 mm	44 kg
NS3-44-500	160	110	302 A	210 A		
NS3-44-600	200	160	376 A	302 A		
NS3-45-760	250	200	468 A	376 A	Size 5 454 x 685 x 285 mm	49 kg
NS3-45-120	335	250	615 A 668 A	468 A 514 A		
NS3-45-150	400	280	668 A	514 A	Size 5 454 x 685 x 285 mm	52 kg
NS3-47-120	450	335	741 A	615 A	Size 7 530 x 1340 x 420 mm	165 kg
NS3-47-180	560	400	915 A	741 A		
NS3-47-230	670	500	1158 A	914 A		

## Models 500 V

Reference	Max motor power in kW		Amps		Size	Weight
	Starting for low / medium loads	Starting for high loads	Starting for low / medium loads	Starting for high loads		
NS3-51-25	11	7.5	23 A	16 A	Size 1 200 x 370 x 182 mm	8.5 kg
NS3-51-55	22	15	37 A	23 A		
NS3-51-90	30	18.5	44 A	30 A		
NS3-52-90	37	22	59 A	37 A	Size 2 200 x 370 x 255 mm	10 kg
NS3-52-91	45	30	72 A	44 A		
NS3-52-132	55	37	87 A	59 A		
NS3-52-160	75	55	106 A	87 A		
NS3-53-250	90	63	144 A	106 A	Size 3 200 x 470 x 265 mm	16 kg
NS3-53-251	110	75	173 A	121 A		
NS3-53-300	132	90	210 A	144 A		
NS3-54-300	160	110	251 A	173 A	Size 4 454 x 685 x 285 mm	44 kg
NS3-54-500	200	132	302 A	210 A		
NS3-54-600	250	200	376 A	302 A		
NS3-55-760	315	250	468 A	376 A	Size 5 454 x 685 x 285 mm	49 kg
NS3-55-1200	400	315	6215 A	468 A	Size 6 640 x 715 x 390 mm	85 kg
NS3-55-1500	450	355	668 A	514 A		

NS3-57-1200	500	400	741 A	615 A	Size 7 530 x 1340 x 420 mm	165 kg
NS3-57-1800	630	500	915 A	741 A		
NS3-57-2300	900	630	1158 A	914 A		

## Accessories:

MDB-NS	MODBUS interface
OPT-MUL	Multi-option card
OPT-LGD	Logidem software (under Windows)
OPT-DEP3	Remote display
OPT-CAD3	Remote display and keyboard
CA820-423TC	Control board with keyboard 400 V, power supply: 230 V
CA820-623TC	Control board with keyboard 690 V, power supply: 230 V
DE60837C	IP20 sealing for models of size 1 to 3